

FUNCTIONALIZED PARTICLES FOR COMPOSITE SENSORS

ABSTRACT OF THE DISCLOSURE

A chemical sensor having a transducer element and a layer of composite material including a polymer matrix and a solid particulate filler disposed in the polymer matrix provides chemical sensors exhibiting improved properties. In particular, the device allows polymer matrix materials to be selected based primarily on diffusion properties, strength, stability and other physical characteristics substantially independent of limitations and compromises that arise when attempting to synthesize polymers having specific types of sensory groups chemically bound to the polymer. The invention also allows greater ability to modify sensor response characteristics by appropriate modification of the particulate filler, whereby a diverse sensor array may be fabricated more easily and at a lower cost.